Interpersonal Neurobiology

“The mind is an emergent, self-organizing process that shapes how energy and information move across time. ... The mind is not separate from our bodies or from our relationships—it both arises from them and regulates them.” –Daniel Siegel, MD

The Mindsight Institute

The Dawn of Mind-Body Medicine on Anzio Beach: Henry Beecher, M.D.

- FMRI study of subjects receiving electric shocks who were told they were getting a pain relieving cream.
- Activity in brain areas involved in sensing pain decreased.
NCCAM Mind-Body Medicine

- Focuses on interactions among brain, mind, body and behavior.
- Researches effects of emotional, mental, social, spiritual and behavioral factors on health.
- Fundamental guiding precept is respect for and enhancement of each person’s capacity for self-knowledge and self-care.
“The field views illness as an opportunity for personal growth and transformation, and health care providers as catalysts and guides in this process.”
I have come to believe that it is through the establishment of a unique doctor-friend-patient relationship that most of the healing occurs, whether helped along by surgery, acupuncture, or regular doses of approved medicines.”

-Joseph Martin, MD
Former Dean of HMS
Compassion and Healing

Showing a film of Mother Theresa resulted in increased sIGA. After an hour levels fell to baseline, but rose again when the subjects were asked to contemplate a time when they experienced compassion and kindness.
Love is the Heart of Healing

TLC reduces IL-6 and cortisol levels, while increasing HGH levels. This is part of how loving support induces and sustains the self healing mechanisms of the body.
Negative Emotions and Proinflammatory Cytokines

• IL-6 overproduction results from both physical and emotional stress.
• Depression and anxiety increase IL-6 production.
• Inflammation is a commonality in heart disease, diabetes, osteoporosis, aging, some cancers and many chronic illnesses
Love and Health

• Antagonist to stress
• Stimulates pleasure system (increases endorphins, endogenous cannabinoids, endogenous morphine, dopamine, oxytocin, vasopressin, nitric oxide)
• Decreases anxiety and depression
• Enhances motivation and positive choice
• Increases wellbeing
• Decreases physical symptoms
### Age Standardized Death Rates per 100,000 men ages 40-69

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Nonsmokers</th>
<th>20+ per day smokers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>796</td>
<td>1560</td>
</tr>
<tr>
<td>Single</td>
<td>1074</td>
<td>2567</td>
</tr>
<tr>
<td>Widowed</td>
<td>1396</td>
<td>2570</td>
</tr>
<tr>
<td>Divorced</td>
<td>1420</td>
<td>2695</td>
</tr>
</tbody>
</table>
Natural Killer Cells Moving On
Dan Siegel, MD: Monitor and Modify the Information Flow

Emotional regulation requires:
1. Monitoring one’s affective state
2. Modifying the flow of energy “in a way that moves the system- body and relationships- toward wellbeing.”

This is called integration, which leads to health.
Emotions are the Mind-to-Body Link

- Candace Pert, Ph.D.
- Informational Molecules released from cells in the limbic system
- Paul Eckman, Ph.D. research on facial expression and emotion
- emotions as messengers
“People with mindful awareness training have a shift in their brains toward an “approach” state that allows them to move toward rather than away from challenging situations. This is the brain signature of resilience.”

-Dan Siegel, MD
Take 2: The Healing Presence Revisited

“I have come to believe that it is through the establishment of a unique doctor-friend-patient relationship that most of the healing occurs, whether helped along by surgery, acupuncture, or regular doses of approved medicines.”

-Joseph Martin, MD
Former Dean of HMS
Simple, But Not Easy

**Compassionate Presence** is what remains when stress is removed. It is a nonjudgmental awareness of the moment characterized by clarity, love, wisdom and non-attachment. This is a person’s essential self or true nature, the root of enlightened social action and healing.
Too Busy, Too Fried?
There is a pervasive form of contemporary violence - activism and overwork. The rush and pressure of modern life are a form, perhaps the most common form, of its innate violence.

To allow oneself to be carried away by a multitude of conflicting concerns, to surrender to too many demands, to commit oneself to too many projects, to want to help everyone in everything, is to succumb to violence.

The frenzy of our activism neutralizes our work for peace. It destroys our own inner capacity for peace. It destroys the fruitfulness of our own work because it kills the root of inner wisdom which makes work fruitful.”

-Thomas Merton
Symptoms of Burnout

Pervasive fatigue: negative outlook; cynicism about work and the results of the work; irritability with colleagues, clients/patients and family; loss of empathy; withdrawal; absenteeism, physical symptoms including insomnia, GI distress, back pain, headaches, and the whole gamut of stress-related disorders; substance abuse; loss of meaning; loss of self-worth; anxiety and depression; diminished performance
Maslach Burnout Inventory

Three Scales, 22 items, well validated in numerous populations including the military:

1. Emotional exhaustion/ physical depletion
2. Depersonalization: cynicism toward work and impersonal response to clients/patients
3. Reduced sense of personal accomplishment and feelings of achievement
Compassion Fatigue is Underappreciated

“The expectation that we can be immersed in suffering and loss daily and not be touched by it is as unrealistic as expecting to be able to walk on water without getting wet. This sort of denial is no small matter.

Rachel Naomi Remen, MD
Stages of Descent
MODIFIED FROM FREUDENBERGER AND NORTH

- **Stage 1**: Driven by an Ideal
- **Stage 2**: Working Like a Maniac
- **Stage 3**: Putting Your Own Needs Last
- **Stage 4**: Miserable and Clueless as to Why
- **Stage 5**: The Death of Values
- **Stage 6**: Frustrated, Aggressive, and Cynical
Loss of Empathy

• Stage 7: Emotionally Exhausted and Disengaged
• Stage 8: Destructive self-comfort
• Stage 9: Isolation
• Stage 10: Inner Emptiness
• Stage 11: Who Cares and Why Bother?
• Stage 12: Physical and Mental Collapse
“This paper proposes that eight positive emotions: awe, love (attachment), trust (faith), compassion, gratitude, forgiveness, joy and hope constitute what we mean by spirituality. These emotions have been grossly ignored by psychiatry....Spirituality is not about ideas, sacred texts and theology; rather, spirituality is all about emotion and social connection... Our whole concept of psychotherapy might change if clinicians set about enhancing positive emotions rather than focusing only on negative emotions.”
The spiritual is that realm of human experience which religion attempts to connect us to through dogma and practice. Sometimes it succeeds and sometimes it fails. Religion is a bridge to the spiritual- but the spiritual lies beyond religion. Unfortunately, in seeking the spiritual, we may become attached to the bridge rather than crossing over it.

-Rachel Naomi Remen, M.D.
Spirituality and Meaning

Our birth is but a sleep and a forgetting, the soul that rises with us, our life’s star, hath elsewhere its setting and cometh from afar, not in entire forgetfulness and not in utter nakedness, but trailing clouds of glory do we come.

- Wordsworth